

Claims

1. A method for preventing the dehalogenation of an aromatic compound, the method comprising:

protecting an at least one halogen substituted aromatic ring of the aromatic compound with at least one hydroxyl group located on the at least one halogen substituted aromatic ring of the aromatic compound;

reacting the aromatic compound with at least one alkali metal in an at least one nitrogen containing base and at least one alcohol; and

maintaining a ratio of the alcohol to the nitrogen containing base at which the at least one halogen substituted aromatic ring is not dehalogenated.

2. The method of claim 1 wherein the at least one alkali metal includes an alkali metal selected from the group consisting of Li, Na, K, Ca and mixtures thereof.

3. The method of claim 1 wherein the at least one nitrogen containing base includes a base selected from the group of ammonia, methylamine, ethylamine and mixtures thereof.

4. The method of claim 1 wherein the ratio of the alcohol to the nitrogen containing base is about 1:1 to about 1:4.

5. The method of claim 1 further including removing the at least one hydroxyl group from the at least one aromatic ring.

6. A method for the selective reduction of a compound having at least one first aromatic ring including at least one halogen group and at least one second aromatic ring, the method comprising:

protecting the at least one first halogen substituted aromatic ring with at least one hydroxyl group located on the at least one first halogen substituted aromatic ring;

reducing an at least one functional group on the at least one second aromatic ring by reacting the compound with at least one alkali metal in the presence of at least one nitrogen containing base and at least one alcohol; and

maintaining a ratio of the nitrogen containing base to the alcohol, at which the at least one first halogen substituted aromatic ring is not reduced.

7. The method of claim 6 wherein the at least one alkali metal includes an alkali metal selected from the group consisting of Li, Na, K, Ca and mixtures thereof.

8. The method of claim 6 wherein the at least one nitrogen containing base includes a base selected from the group of ammonia, methylamine, ethylamine and mixtures thereof.

9. The method of claim 6 wherein the ratio of the alcohol to the nitrogen containing base is about 1:1 to about 1:4.

10. The method of claim 6 further including removing the at least one hydroxyl group from the at least one aromatic ring after the selective reduction.

11. The method of claim 6 wherein the at least one second aromatic ring is reduced to a 1,3-cyclohexadiene or 1,4-cyclohexadiene.

12. The method of claim 6 wherein the at least one second aromatic ring includes at least one halogen group wherein the at least one second aromatic ring is dehalogenated.

13. A method for selective dehalogenation of an aromatic compound having at least one first aromatic ring including at least one halogen group and at least one second aromatic ring having at least one halogen group, the method comprising:

protecting the at least one first aromatic ring with at least one hydroxyl group located on the at least one first aromatic ring;

dehalogenating the at least one second aromatic ring by reacting the aromatic compound with at least one alkali metal in the presence of at least one nitrogen containing base and at least one alcohol; and

maintaining a ratio of the alcohol to the nitrogen containing base at which the at least one halogen group on the at least one first aromatic ring is retained on the first aromatic ring.

14. The method of claim 13 wherein the at least one alkali metal includes an alkali metal selected from the group consisting of Li, Na, K, Ca and mixtures thereof.

15. The method of claim 13 wherein the at least one nitrogen containing base includes a base selected from the group of ammonia, methylamine, ethylamine and mixtures thereof.

16. The method of claim 13 wherein the ratio of the alcohol to the nitrogen containing base is about 1:1 to about 1:4.

17. The method of claim 13 further including removing the at least one hydroxyl group from the at least one aromatic ring after the selective dehalogenation.